AMENDMENTS TO THE CLAIMS

The following claim listing replaces all prior listings of the claims submitted in the application:

1. - 2. (Canceled)

3. (Withdrawn) A device for determining the isoelectric point of a charged analyte, comprising: a titration chamber comprising an inlet port for introducing a liquid into the titration chamber and an outlet port for exiting a liquid from the titration chamber; an electrode array isolated from the titration chamber and operative to establish an electric field gradient in the titration chamber;

4. - 19. (Canceled)

20. (Currently Amended) A method of determining the isoelectric point of a charged analyte comprising: focusing a charged analyte in a flowing liquid in an electric field gradient to form in the flowing liquid a focused band of the charged analyte at a first stable position in the electric field gradient; changing the pH of the flowing liquid at least once by an amount sufficient to change the position of the focused band of the charged analyte within the electric field gradient to a second stable position in the electric field gradient; obtaining pH and corresponding position data for the charged analyte, comprising determining the pH of the flowing liquid and the corresponding position of the focused band of the charged analyte at a plurality of band positions within the electric field gradient; and determining the isoelectric point of the charged analyte based on the pH and corresponding position data.

21. (Original) The method of claim 20, wherein the isoelectric point is determined by extrapolation.

22. (Original) The method of claim 20, wherein the pH is incremented to a plurality of pH's above the isoelectric point of the charged analyte and to a plurality of pH's below the isoelectric point of the charged analyte.

23. (Original) The method of claim 22, wherein the isoelectric point is determined by interpolation.

24. (Original) The method of claim 20, wherein the pH of the flowing liquid is incremented by mixing the flowing liquid with a titrating solution.

25. (Original) The method of claim 20, wherein the pH of the flowing liquid is incremented by dialyzing ions from a titrating solution into the flowing liquid.

26. (Original) The method of claim 22, wherein the pH is incremented from above the isoelectric point downward until an upper bracketing pH at which the charged analyte elutes is reached;

the pH is incremented from below the isoelectric point upward until a lower bracketing pH at which the charged analyte elutes;

the upper bracketing pH and the lower bracketing pH are obtained; and

the isoelectric point is determined by averaging the upper bracketing pH and the lower bracketing pH.

27. (Original) The method of claim 20, wherein the charged analyte is first focused in a DFGF chamber.

28. (Original) The method of claim 27, wherein the DFGF chamber comprises a separation chamber which comprises molecular sieve operative to shift the location at which each stationary focused band of charged analyte forms under the focusing process parameters.

29. (Original) The method of claim 20, wherein the charged analyte comprises a biomacromolecules.

30. (Original) The method of claim 29, wherein the biomacromolecules comprises protein.

31. (Original) The method of claim 29, wherein the biomacromolecules comprises DNA.

32. (Original) The method of claim 20, wherein the charged analyte comprises multiple charged analytes.

33. (Original) The method of claim 26, wherein an analyte band detector is used to sense elution of the charged analyte.

34. (Original) The method of claim 26, wherein the sample is split and portions of the sample are separately focused and incremented.

35. (Original) The method of claim 20, wherein the pH is determined by calculation from mixing a known amount of a titrating solution of known pH with a known amount of a flowing liquid of known pH.

36. (Withdrawn) A method of developing a two-dimensional display of information regarding a charged analyte, comprising:

determining the molecular weight of the charged analyte;

determining the isoelectric point of the charged analyte; and

displaying the molecular weight and the isoelectric point in a two-dimensional display format comprising a first axis representing molecular weight values and a second axis representing isoelectric point values;

wherein determining the isoelectric point of the charged analyte comprises focusing a charged analyte in a flowing liquid in an electric field gradient to form in the flowing liquid a

focused band of the charged analyte at a position in the electric field gradient;

incrementing the pH of the flowing liquid at least once by an amount sufficient to change the position of the focused band of the charged analyte within the electric field gradient;

obtaining pH and corresponding position data for the charged analyte,

comprising determining the pH of the flowing liquid and the corresponding position of the focused band of the charged analyte at a plurality of band positions within the electric field gradient; and

determining the isoelectric point of the charged analyte based on the pH and corresponding position data.

37. (Withdrawn) The method of claim 36, wherein the two-dimensional display is generated by a computer and displayed on a monitor.

38. (Withdrawn) A method of developing a two-dimensional display of information regarding charged analytes, comprising:

determining the molecular weight of each of multiple charged analytes;

determining the isoelectric point of each of the charged analytes; and

displaying the molecular weight and the isoelectric point for each of the charged analytes in a two-dimensional display format comprising a first axis representing molecular weight values and a second axis representing isoelectric point values; wherein determining the molecular weight of each of the charged analytes comprises: providing a device for separating and focusing the charged analytes comprising:

a first chamber comprising an inlet for introducing liquid into the first chamber and an outlet for exiting liquid from the first chamber ; and

an electrode array isolated from the first chamber and operative to be energized to establish an electric field gradient in the first chamber;

establishing a flow of liquid comprising the multiple charged analytes through the first chamber under a set of focusing process parameters including an electric field gradient sufficient to focus the multiple charged analytes each in a corresponding stationary focused band in the electric field gradient;

wherein the first chamber contains molecular sieve operative to shift the location at which each stationary focused band of charged analyte forms under the focusing process parameters; and wherein determining the isoelectric point of the charged analytes comprises:

focusing each of the charged analytes in a flowing liquid in an electric field gradient to form in the flowing liquid a stationary focused band of the charged analyte at a position in the electric field gradient;

incrementing the pH of the flowing liquid at least once by an amount sufficient to change the position of the stationary focused band of the charged analyte within the electric field gradient;

obtaining pH and corresponding position data for the charged analyte, comprising determining the pH of the flowing liquid and the corresponding position of the focused band of the charged analyte at a plurality of band positions within the electric field gradient; and

determining the isoelectric point of the charged analyte based on the pH and corresponding position data.

39. (Original) The method of claim 20, wherein the charged analyte is first focused in an EFGF chamber.

40. (Original) The method of claim 39, wherein the EFGF chamber comprises a separation chamber which comprises molecular sieve operative to shift the location at which each stationary focused band of charged analyte forms under the focusing process parameters.

41. (Original) The method of claim 39, wherein the EFGF chamber comprises a configured electrode chamber.

42. (Original) The method of claim 39, wherein the EFGF chamber comprises a configured separation chamber.

43. - 97. (Canceled)